13. A method of producing a hybrid DNA molecule having a sense strand and an anti-sense strand and in which, reading in the 5' to 3' direction, the sense strand has the sequences x_1, x_2.....x_n, where n is greater than or equal to 3, the method comprising the steps of

(i) providing in a single reaction mixture

(a) the sequences x_1, x_2.....x_n and their complementary sequences x_1', x_2'.....x_n', to be assembled into the hybrid molecule,

(b) for each pair of complementary sequences defined in (a) a respective pair of PCR primers each having a priming sequence and which are such that the primers for the 3' ends of any two sequences (x_i, $x'_{(i+1)}$), where i is 1 to (n-1), have specifically complementary linker sequences connected to their respective priming sequences via an adenine residue, and

(2) effecting a first stage PCR reaction in which those primers provided with linker sequences are present in limiting concentrations and a polymerase which adds a 3' adenine overhang to the end of an extended strand; and

(3) effecting a second stage PCR reaction using a single pair of primers one of which provides the 5'-end of the sense strand and other of which provides the 3'-end of the anti-sense strand of the required hybrid molecule

whereby said hybrid molecule is generated.

14. A method as claimed in claim 13 wherein the polymerising enzyme for steps (2) and (3) is *Taq*.

15. A method as claimed in claim 13 wherein the annealing temperature (T_m) of the linker sequences is greater than that of the priming sequences to the x and x' sequences.

16. A method as claimed in claim 15 wherein the annealing temperature of the linker sequences is 2 to 5°C greater than that of the priming sequences to the x and x' sequences.

17. A method as claimed in claim 13 wherein the linker sequences do not have intrinsic secondary structure.

18. A method as claimed in claim 13 wherein between the first and second stage PCR reactions the reaction mixture is frozen to deactivate residual PCR activity.

19. A method as claimed in claim 13 wherein between the first and second stage PCR reactions the reaction mixture is treated with an exonuclease I to digest single stranded molecules.

20. A method as claimed in claim 13 wherein each of the first and second stage PCR reactions utilise a thermally activated polymerase.

21. A method of mutation analysis wherein the analysis is effected on a DNA hybrid molecule produced in accordance with the method of claim 1.

22. A set of primers incorporating the following sequences.

5'tcatattagccgctgcattgcc-**a**-3'
5'ggcaatgcagcggctaatatga-**a**- 3'

5'agccactacccaaactcctgt-**a**-3'
5'acaggagtttgggtagtggct-**a**-3'

5'tgtctcactgaacctgcctacct--**a**-3'
5'aggtaggcaggttcagtgagaca-**a**-3'

5'cctcat taccggctgtcagactg-**a**-3'
5'cagtctgacagccggtaatgagg-**a**-3'